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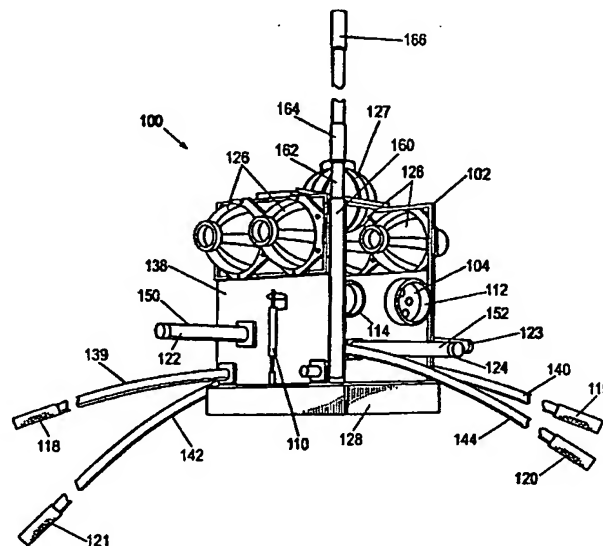
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(54) Title: **METHOD AND SYSTEM FOR SEAFLOOR GEOLOGICAL SURVEY USING VERTICAL ELECTRIC FIELD MEASUREMENT**



(57) Abstract: A system for mapping electrical conductivity of the seafloor incorporates a plurality of data logging units, where each unit (100) is an assembly adapted for deployment at a location on the seafloor for measurement of horizontal electric and magnetic fields. Rigidly attached and extending vertically from the unit assembly is a vertically-oriented substantially rigid arm (158) having a pair of vertically-displaced electrodes (160, 162) disposed on the arm to create a vertically-oriented dipole antenna. The electrodes are in electrical communication with an amplifier located within the assembly which generates an amplified signal which is then provided to a data logging processor also located within the assembly. The processor collects time series of amplified electric field and magnetic signals over a predetermined period of time.

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